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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
RYMAN, DANIEL J	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/833,493	KOVACEVIC, BRANKO D.	
	Examiner	Art Unit	
	Daniel J. Ryman	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7-28 and 31-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-28 and 31-56* is/are rejected.

7)☒ Claim(s) *51* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/28/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 2/18/2005 have been fully considered but they are not persuasive. On pages 10-11 and 13 of the Response, with respect to claims 1, 25, 47, and 52, Applicant asserts that Har-Chen's disclosure of adding or dropping samples to achieve synchronization is not equivalent to a "sample rate conversion" since a "sample rate conversion" requires "filtering and/or some form of interpolation that results in a smoothing of the resulting upsampled or downsampled output." Thus, "sample rate conversion is a decidedly more complex operation than simply dropping or adding data elements." Examiner, respectfully, submits that Applicant never limits the term "sample rate conversion" to "filtering and/or some form of interpolation that results in a smoothing of the resulting upsampled or downsampled output" in the claims. Although Applicant may have taught a specific "sample rate conversion" process in the disclosed invention, Examiner is not allowed to not read limitations from the disclosure into the claims. Therefore, Examiner is required to interpret "sample rate conversion" as broadly as is reasonably possible.

2. The term "sample rate conversion" only necessitates some change in the sample rate. In Har-Chen, the rate of samples is either increased or decreased by adding or dropping samples. As such, Examiner asserts that Har-Chen's disclosed process reads on Applicant's claimed "sample rate conversion." Therefore, Examiner maintains that the claims are rendered obvious by the cited prior art.

3. On page 12 of the Response, Applicant further asserts, with respect to claims 10 and 34, that, due to the differences between PCR and PTS, there is no motivation to modify Har-Chen to

compare a PTS value to the LTC rather than a PCR value to the LTC. Examiner, respectfully, disagrees. Har-Chen is directed to synchronizing an audio stream between an encoder and decoder by duplicating or eliminating a data element. Maturi, similarly, teaches synchronizing an audio stream by duplicating or eliminating a data element. However, Maturi teaches synchronizing in an MPEG system where a Presentation Time dictates when a sample should be decoded (abstract). Thus, Examiner submits that one of ordinary skill in the art would have been motivated to modify Har-Chen using Maturi in order to implement Har-Chen's synchronizing method in an MPEG system. As such, Examiner maintains that the claims are rendered obvious by the cited prior art.

4. For the above reasons, Examiner maintains the rejection of the claims as being obvious in view of the cited prior art.

Claim Objections

5. Claim 51 is objected to because of the following informalities: "The system as in Claim 47" should be "The computer readable medium as in Claim 47". Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 7, 25, 31, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Har-Chen et al. (US 6,429,902), of record.

8. Regarding claims 1, 25, and 47, Har-Chen discloses determining a synchronization state of an audio data relative to a system clock (col. 5, lines 30-36); when the synchronization state is in a first state maintaining a current playback (col. 5, lines 30-36); when the synchronization state is in a second state making a first playback adjustment to the audio data, wherein the first playback adjustment includes performing a sample rate conversion of one or more audio data samples of the audio data (col. 5, lines 30-36) where sample rate conversion is effectively achieved when an audio sample is duplicated or eliminated.

Har-Chen does not expressly disclose that when the synchronization state is in a third state making a second playback adjustment to the audio data, the second playback adjustment provides a coarser playback adjustment than the first playback adjustment. However, Har-Chen discloses that different size counters may be used to achieve different levels of time-accuracy in synchronizing audio data to a local time clock (col. 6, line 63 - col. 7, line 9). Har-Chen also discloses decoding and synchronizing audio data belonging to different types of data streams (col. 6, lines 18-33). Har-Chen further discloses that a calculator is employed to determine the required adjustment rate (col. 5, lines 33-36). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have, when the synchronization state is in a third state making a second playback adjustment to the audio data, the second playback adjustment provide a coarser playback adjustment than the first playback adjustment in order to provide an accuracy level of synchronization commensurate with the sampling rate of the particular type of audio data being decoded.

9. Regarding claims 7 and 31, Har-chen discloses a video PES and audio PES are multiplexed for transport, then separated back into video and audio streams to be synchronized

for decoding (col. 1, lines 41-45). Thus, the synchronization method of Har-Chen at the decoder performs the adjustments to PES packets.

10. Claims 2-4, 26-28, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Har-Chen et al. (US 6,429,902), of record, as applied to claims 1, 5-7, 25, 29-31, and 47 above, and further in view of Nuber et al. (US 5,703,877), of record.

11. Regarding claims 2-4, 26-28, and 48, Har-Chen fails to expressly disclose a fourth state of synchronization that initializes the system clock to a predefned value based on a program counter clock for MPEG-type data associated with the source of the audio data. Nuber discloses a state for initializing a system clock at the decoder based on a PCR value of the source clock (col. 2, lines 4-8 and col. 9, lines 13-33). This meets the limitation of a predetermined value based on a program counter clock for MPEG-type data. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include this initialization state in the invention of Har-Chen. One of ordinary skill in the art would have been motivated to do this in order to start the decoding process of audio data in sync with the remote encoder clock.

12. Claims 8-24, 32-46, and 49-51, are rejected under 35 U.S.C. 103(a) as being unpatentable over Har-chen et al. (US 6,429,902), of record as applied to claims 1, 5-7, 25, 29-31, and 47 above, and further in view of Maturi et al. (US 5,960,006), of record.

13. Regarding claims 8, 9, 32, and 33, Har-Chen discloses repeating or dropping data elements in order to achieve synchronization (col. 7, lines 20-28). Har-Chen fails to expressly disclose repeating or dropping whole PES packets. Maturi discloses repeating or dropping whole frames in a program stream (col. 7, lines 49-57). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to repeat or drop PES packets to

achieve synchronization of audio data in the invention of Har-Chen. One of ordinary skill in the art would have been motivated to do this in order to save processing power if the desired level of accuracy could be met at this coarse adjustment.

14. Regarding claims 10-12, 34-36, 44, 45, and 51, Har-chen discloses comparing a program clock reference (PCR) to a local time counter (LTC) and then comparing this difference to a tolerance to determine the elimination or duplicating of audio samples (col. 5, lines 30-36). This LTC of Har-Chen meets the limitation of an STC. Har-Chen fails to expressly disclose comparing a PTS to the LTC. Maturi discloses comparing a PTS value to a system clock time in deciding whether to skip or repeat a data unit (see Abstract). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to compare a PTS value to the LTC of Har-Chen instead of the PCR value. One of ordinary skill in the art would have been motivated to do this in order to achieve synchronization of audio data that takes into account the relevancy of a particular audio sample at the time of synchronization, i.e. whether it still meets its desired decoding time, in addition to synchronizing the encoder and decoder system clocks.

15. Regarding claims 13, 14, and 37, Har-Chen discloses the decoding of different types of audio data that have different sampling rates (col. 6, Table 1).

16. Regarding claim 15, the PCR of Har-Chen acts as a stream identifier by identifying what program audio data belongs to, which implicitly identifies the type of audio data (col. 6, line 10-46).

17. Regarding claims 16, 20, 38, and 39, as described in the paragraph regarding claims 1, 5, 25, 29, and 47 above, Har-Chen discloses an obvious combination meeting the limitations of a second state and third state for different playback adjustments. Har-Chen fails to expressly

disclose a tolerance indicating a range of 2 audio samples to 32 audio samples for the first playback adjustment, and a range of 1 audio frame to 3 audio frames for the second playback adjustment. It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to use the previously mentioned ranges associated with the second and third states. One of ordinary skill in the art would have been motivated to use these ranges in order to meet the requirements of a particular system implementation.

18. Regarding claims 17, 18, 21, and 22, Har-Chen discloses the decoding of different types of audio data that have different sampling rates (col. 6, Table 1).

19. Regarding claims 19 and 23, the PCR of Har-Chen acts as a stream identifier by identifying what program audio data belongs to, which implicitly identifies the type of audio data (col. 6, line 10-46).

20. Regarding claims 24 and 40, Har-Chen discloses a variable tolerance for requiring elimination or duplication in a synchronization state (col. 5, lines 36).

21. Regarding claim 41 and 42, Har-Chen discloses that counters for comparing sampling rates may be implemented in software or hardware (col. 6, line 63- col. 7, line 18).

22. Regarding claim 43, Har-Chen discloses that an incoming bitstream must be separated into audio and video streams to be synchronized for decoding (col. 1, lines 41-45). This meets the limitation of a demultiplexer.

23. Regarding claims 46, 49, and 50, Har-Chen discloses eliminating or duplicating data elements at the audio sample level (col. 5, lines 30-36).

24. Claims 52-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maturi et al. (US 5,960,006), of record, in view of Har-Chen et al. (US 6,429,902), of record.

25. Regarding claim 52, Maturi discloses receiving an MPEG-type transport stream, and demultiplexing the MPEG-type transport stream into transport packets (col. 4, line 40 - col. 5, line 60). Maturi also discloses determining if a PTS value associated with the PES packets is within a predefined value of the system time clock, and when the PTS value is not within the predefined value, adjusting PES packets related to the transport packets (see Abstract). Maturi fails to expressly disclose synchronizing a system time clock to a program clock reference received through the MPEG-type transport stream. Maturi also fails to expressly disclose adjusting audio samples related to the transport packets when the PTS value is within the predefined value (col. 5, lines 30-36). Har-Chen discloses synchronizing a system time clock to a program clock reference (col. 4, lines 33-57). Har-Chen also adjusting audio samples related to an MPEG-type stream (col. 5, lines 30-36). Additionally, Har-Chen discloses that different size counters may be used to achieve different levels of time-accuracy in synchronizing audio data samples (col. 6, line 63 - col. 7, line 9). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to synchronize the local system clock with a received program clock reference in the invention of Maturi. It also would have been obvious to

provide the ability to adjust audio samples in addition to PES packets. One of ordinary skill in the art would have been motivated to synchronize the local system clock with a received program clock reference in order to eliminate time differences between the remote encoder system clock and local decoder system clock. One of ordinary skill in the art would have been motivated to provide adjustments to audio samples to achieve a finer level of accuracy in audio synchronization.

26. Regarding claim 53 and 54, in order to provide synchronization adjustments on the PES packet and audio sample levels as described in the above paragraph, the transport packets must be processed into PES packets, which in turn must be processed into audio samples.

27. Regarding claim 55, Maturi in view of Har-Chen fails to expressly disclose the predetermined value indicates a range of 1 audio frame to 3 audio frames for playback adjustment. It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to use the previously mentioned range associated with the predetermined value. One of ordinary skill in the art would have been motivated to use this range in order to meet the requirements of a particular system implementation.

28. Regarding claim 56, Maturi fails to expressly disclose the time required for playing audio frames is calculated by determining an audio data type. Har-Chen discloses the ability to decode audio data of diverse types that have different sampling rates (col. 6, Table 1). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to determine the time required for playing audio frames based on audio data type. One of ordinary skill in the art would have been motivated to do this in order to apply the synchronization feature of Maturi to multiple types of audio streams.

Conclusion

29. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 7:00-4:30 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DJR

Daniel J. Ryman
Examiner
Art Unit 2665

ALPUS H. HSU
PRIMARY EXAMINER